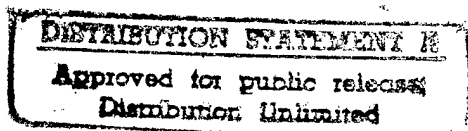


FINAL REPORT
MAY 1995

REPORT NO. 93-19

DOUBLE SECONDARY STEEL
CONTAINERS (SSCs) FOR
STORAGE OF LEAKING
M55 CHEMICAL ROCKETS



19960827 104

Prepared for:
U.S. Army Armament, Munitions
and Chemical Command
ATTN: AMSMC-DSD-AS
Rock Island, IL 61299-6000

Distribution Unlimited

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VALIDATION ENGINEERING DIVISION
SAVANNA, ILLINOIS 61074-9639



U.S. ARMY
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CENTER AND SCHOOL

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FIELD	GROUP	SUB-GROUP			
19. ABSTRACT (Continue on reverse if necessary and identify by block number) <p>The U.S. Army Defense Ammunition Center and School (USADACS), Validation Engineering Division (SMCAC-DEV), was tasked by U.S. Army Armament, Munitions and Chemical Command (AMCCOM) to perform leak integrity tests on two SSCs joined together. These tests were conducted following modification of the SSC flanges so the two units could be joined together. These modified SSCs will be used as a second overpack for leaking M55 chemical rockets. This report contains results of the tests conducted.</p>					
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION UNCLASSIFIED		
22a. NAME OF RESPONSIBLE INDIVIDUAL JEROME H. KROHN			22b. TELEPHONE (Include Area Code) 815-273-8929		22c. OFFICE SYMBOL SMCAC-DEV

U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL
VALIDATION ENGINEERING DIVISION
SAVANNA, IL 61074-9639

REPORT NO. 93-19

DOUBLE SECONDARY STEEL CONTAINERS (SSCs) FOR STORAGE OF
LEAKING M55 CHEMICAL ROCKETS

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PART 1

INTRODUCTION

A. BACKGROUND. The U.S. Army Defense Ammunition Center and School (USADACS), Validation Engineering Division (SMCAC-DEV), was tasked by U.S. Army Armament, Munitions and Chemical Command (AMCCOM) to perform leak integrity tests on two SSCs joined together. These tests were conducted following modification of the SSC flanges so the two units could be joined together. This approach was taken so multiple M55 rockets could be overpacked at one time versus the current procedure of Single Round Containers (SRCs) for each rocket. This container will not be used to overpack M55 rockets that are not already in a first overpack.

B. AUTHORITY. This program was conducted IAW mission responsibilities delegated by the U.S. Army Armament, Munitions and Chemical Command (AMCCOM), Rock Island, IL.

C. OBJECTIVE. The objective of these tests was to verify that the SSCs, following modification, could still maintain their leak integrity and be used as chemical storage overpack containers.

D. CONCLUSION. All modified double SSCs had no detectable leaks in the 1×10^{-6} cc/he/sec/1.5 psi leak rate ranges with the exception of three containers (serial numbers 3117, 2544, and 3437), which had leak rates of 4×10^{-6} cc/he/sec/1.5 psi, 2×10^{-6} cc/he/sec/1.5 psi, and 2×10^{-6} cc/he/sec/1.5 psi, respectively. The maximum sensitivity of the tests conducted was 1×10^{-6} cc/he/sec/1.5 psi. All containers passed leak rate requirements for depot chemical storage containers.

PART 2

30 NOVEMBER - 1 DECEMBER 1994

ATTENDEES

William R. Meyer
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815-273-8090

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PART 3

TEST PROCEDURE

Helium-leak tests were performed at 1.5 +/- 0.5 psi with the use of a mass spectrometer and a sampling probe (referred to as the helium quick test). This test method has a maximum sensitivity of 1×10^{-6} cc/he/sec/1.5psi and was used due to the large physical size of the items being tested.

PART 4

TEST ITEM

Two SSCs Joined Together

- | | |
|----------------------------|----------------|
| a. Height: | 48.0 inches |
| b. Width: | 33.3 inches |
| c. Length: | 84.5 inches |
| d. Gasket: | butyl rubber |
| e. Torque on Flange Bolts: | 30 ft-lbs. |
| f. Total Tested: | 63 double SSCs |

PART 5

TEST RESULTS

A total of 63 double SSCs joined together were tested following modification. With the exception of three SSCs joined together (serial numbers 3117, 2544, and 3437), all containers had no detectable leaks. The three SSCs that did leak had leak rates of 4×10^{-6} cc/he/sec/1.5 psi, 2×10^{-6} cc/he/sec/1.5 psi, and 2×10^{-6} cc/he/sec/1.5 psi, respectively. It should be noted that the maximum sensitivity of the tests conducted was 1×10^{-6} cc/he/sec/1.5 psi; therefore, the true leak rate for all but the three containers listed above is not known. Table 1 below lists the serial number and leak rate for each container.

Table 1
Helium Leak Tests
Double SSC's

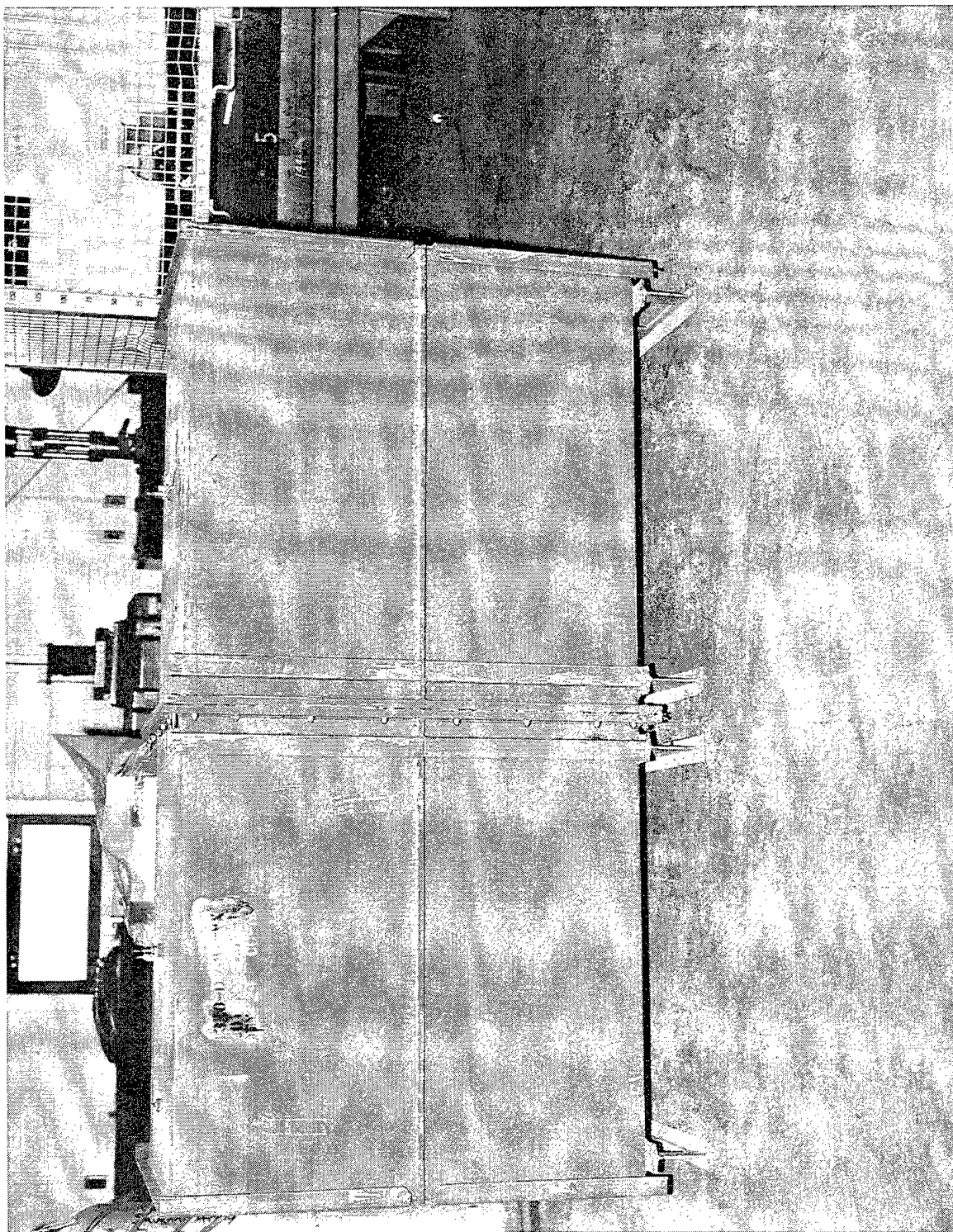
<u>SSC Serial Number</u>	<u>Leak Rate cc/he/sec/1.5psi</u>
0099	$<1 \times 10^{-6}$
0176	$<1 \times 10^{-6}$
0195	$<1 \times 10^{-6}$
0217	$<1 \times 10^{-6}$
0224	$<1 \times 10^{-6}$
0283	$<1 \times 10^{-6}$
0309	$<1 \times 10^{-6}$
0571	$<1 \times 10^{-6}$
0000	$<1 \times 10^{-6}$
0581	$<1 \times 10^{-6}$
0683	$<1 \times 10^{-6}$

SSC <u>Serial Number</u>	Leak Rate <u>cc/he/sec/1.5psi</u>
0810	<1 X 10 ⁻⁶
0816	<1 X 10 ⁻⁶
0823	<1 X 10 ⁻⁶
0859	<1 X 10 ⁻⁶
1022	<1 X 10 ⁻⁶
1229	<1 X 10 ⁻⁶
1300	<1 X 10 ⁻⁶
1306	<1 X 10 ⁻⁶
1330	<1 X 10 ⁻⁶
1421	<1 X 10 ⁻⁶
1440	<1 X 10 ⁻⁶
1498	<1 X 10 ⁻⁶
1500	<1 X 10 ⁻⁶
1510	<1 X 10 ⁻⁶
1525	<1 X 10 ⁻⁶
1687	<1 X 10 ⁻⁶
1702	<1 X 10 ⁻⁶
1731	<1 X 10 ⁻⁶
1746	<1 X 10 ⁻⁶
1850	<1 X 10 ⁻⁶
1963	<1 X 10 ⁻⁶
1999	<1 X 10 ⁻⁶
2379	<1 X 10 ⁻⁶
2544	2 X 10 ⁻⁶
2571	<1 X 10 ⁻⁶
2583	<1 X 10 ⁻⁶
0000	<1 X 10 ⁻⁶

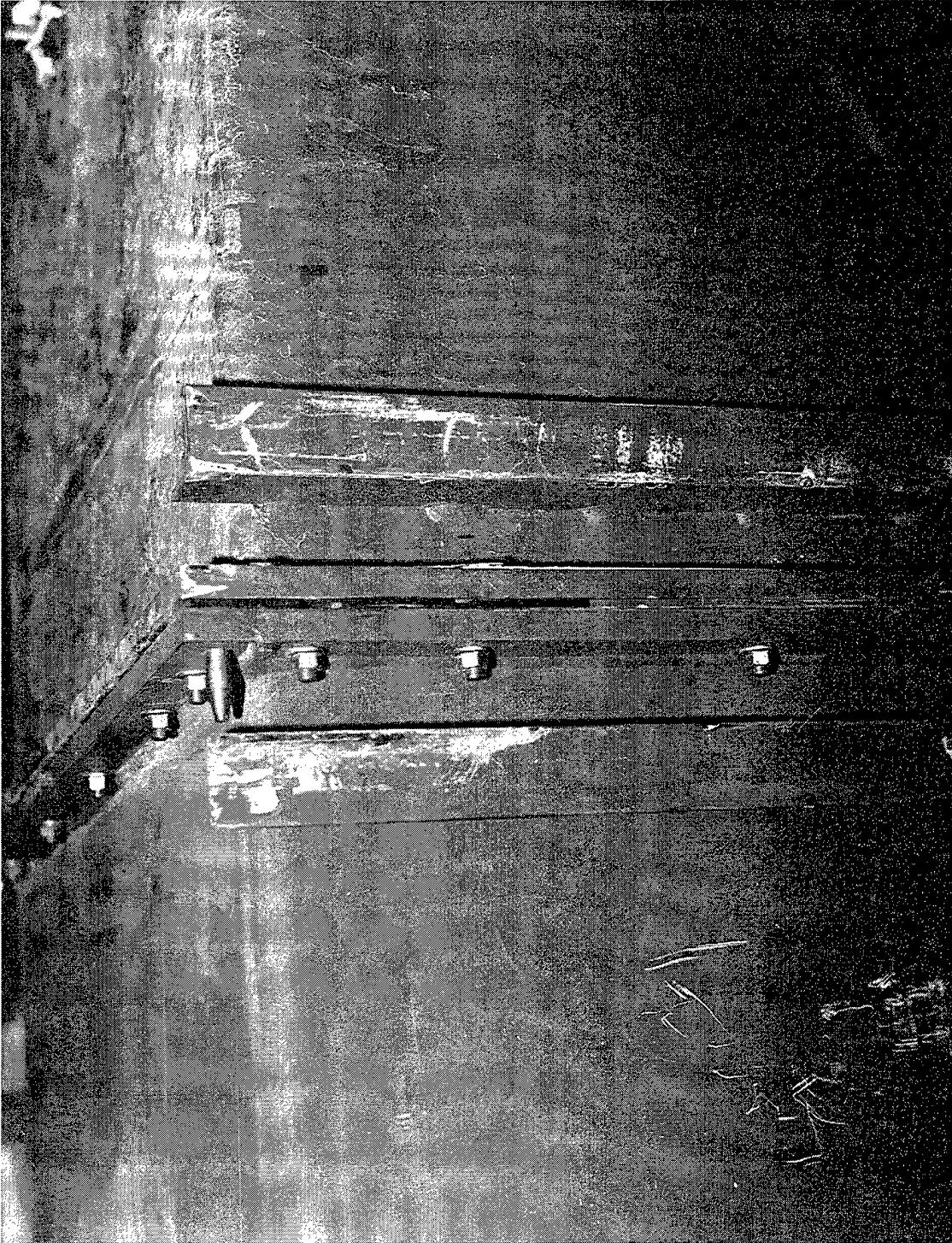
SSC <u>Serial Number</u>	Leak Rate <u>cc/he/sec/1.5psi</u>
2587	$<1 \times 10^{-6}$
2595	$<1 \times 10^{-6}$
2612	$<1 \times 10^{-6}$
2690	$<1 \times 10^{-6}$
2718	$<1 \times 10^{-6}$
2745	$<1 \times 10^{-6}$
2746	$<1 \times 10^{-6}$
2749	$<1 \times 10^{-6}$
2993	$<1 \times 10^{-6}$
0000	$<1 \times 10^{-6}$
2821	$<1 \times 10^{-6}$
2830	$<1 \times 10^{-6}$
2918	$<1 \times 10^{-6}$
3037	$<1 \times 10^{-6}$
3063	$<1 \times 10^{-6}$
3068	$<1 \times 10^{-6}$
3117	4×10^{-6}
3135	$<1 \times 10^{-6}$
0000	$<1 \times 10^{-6}$
3215	$<1 \times 10^{-6}$
3270	$<1 \times 10^{-6}$
3423	$<1 \times 10^{-6}$
3437	2×10^{-6}
4070	$<1 \times 10^{-6}$
4095	$<1 \times 10^{-6}$
6060	$<1 \times 10^{-6}$

PART 6

PHOTOGRAPHS



U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL	
PHOTO NO. SCN95-122-1296: This photo shows the side view of a double SSC.	



	U.S. ARMY DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL	
PHOTO NO. SCN95-122-1297: This photo is a close up of the top flange and corner. Note guide pin for aligning SSC flanges during the joining process.		

PART 7

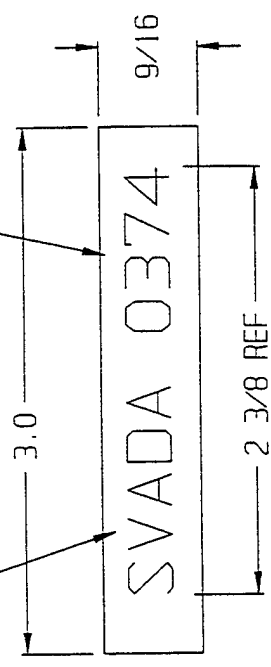
DRAWINGS

NOTES:

1. MATERIAL: 12 GA (.1046) HOT OR COLD ROLLED SHEET STEEL.
2. SERIAL NUMBER "SVADA XXXX" SHALL BE APPLIED BY METAL STAMP 1/4 INCH HIGH TO A DEPTH THAT WILL BE LEGIBLE AFTER PAINTING.

INDICATES THE DEPOT
DOING THE MODIFICATION

THE NUMERIC NUMBER TO BE THE SAME
AS THE NUMBER APPEARING ON
MATCHED PART NO ACVM0230-2



PART NO ACVM0230-4

DISTRIBUTION STATEMENT A,
UNLIMITED

REVISION		DATE		APPROVED	
LTR	DESCRIPTION	DATE		APPROVED	
-	RELEASED FOR PRODUCTION	94-03-04		SPRAGUE	

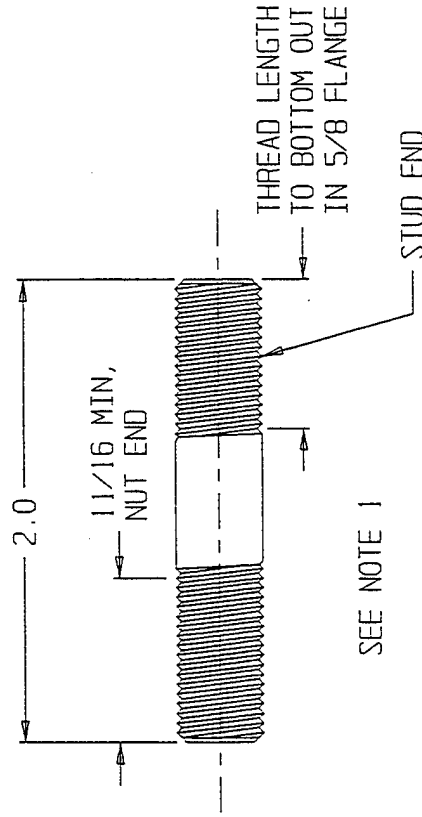
UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. SHARP CORNERS AND EDGES.		BREAK	
TOLERANCES ON		± 1/16	
FRACTIONS		±	
DECIMALS		±	
ANGLES		±	
MATERIAL			
ACVM0230-3			
NEXT ASSY		USED ON	
APPLICATION			

DATE		94-01-10	
DTSMH	CHECKER	PROJ ENGR	
DIW		SPRAGUE	
SYNOPSIS		JHK THOMAS J MICHELS	
SUBMITTED		CHIEF, SUPPLY ENGINEERING DIV	
CHIEF, LOGISTICS ENGINEERING OFFICE		WILLIAM F ERNST	
APPROVED BY CHIEF OF CONVACTION		WILLIAM F ERNST	
GENERAL, U.S. ARMY MATERIAL COMMAND (AMC)		U.S. ARMY	
		DEFENSE AMMUNITION CENTER AND SCHOOL	

DESIGN ACTIVITY		U.S. ARMY	
ARMAMENT, MUNITIONS AND CHEMICAL COMMAND		DEFENSE AMMUNITION CENTER AND SCHOOL	
SAVANNA, ILLINOIS 61074-9639			
SECONDARY STEEL			
CONTAINER, COUPLED			
SIZE	CAGE CODE	ACVM0230	
B	28620		
SCALE 1-1/2		UNIT WT	
		SHEET 4 OF 4	

NOTES:

- 3/8-24 UNF X 2 INCH LENGTH, RIGHT HAND THREAD LENGTHS AS SHOWN, GRADE 8 (150,000 PSI MINIMUM TENSILE STRENGTH), PER SAE J429, CADMIUM PLATED PER QQ-P-416, TYPE II CLASS 2 THREAD.



PART NO ACV00231-1

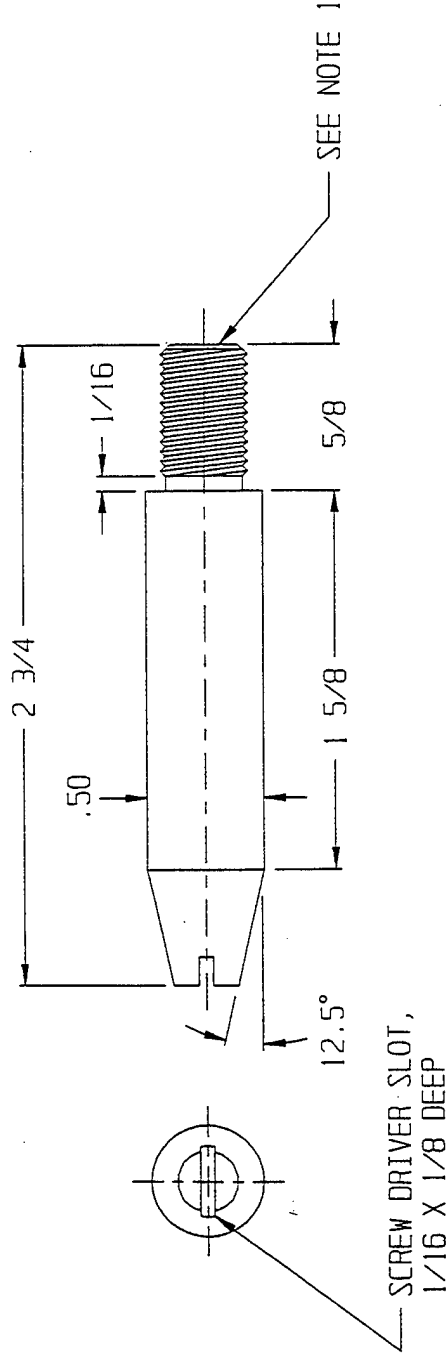
REVISION		
LTR	DESCRIPTION	DATE
-	RELEASED FOR PRODUCTION	94-03-04
XA	CORRECT SPELLING ERROR	94-03-08

<p>DESIGN ACTIVITY</p> <p>U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND DEFENSE AMMUNITION CENTER AND SCHOOL SAVANNA, ILLINOIS 61074-9639</p>		<p>STUD, 3/8-24UNF, SECONDARY STEEL CONTAINER, COUPLED</p>	
SIZE	CAGE CODE	SCALE	UNIT WT
B	28620	2	SHEET 1 OF 1

<p>DATE</p> <p>94-01-10</p>		<p>DESIGN ACTIVITY</p> <p>U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND DEFENSE AMMUNITION CENTER AND SCHOOL SAVANNA, ILLINOIS 61074-9639</p>	
DTW	CHECKER	PROJ ENGR	
JHK	THOMAS J MICHELS	SPRAGUE	
<p>SUBMITTED</p> <p>WILLIAM F ERNST CHIEF, LOGISTICS ENGINEERING OFFICE APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY TALENT CENTER AND SCHOOL</p>		<p>STUD, 3/8-24UNF, SECONDARY STEEL CONTAINER, COUPLED</p>	
<p>UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. BREAK SHARP CORNERS AND EDGES.</p>		<p>SAE J429, CADMIUM PLATED PER QQ-P-416, TYPE II CLASS 2 THREAD.</p>	
<p>TOLERANCES ON</p> <p>FRACTIONS $\pm 1/16$</p> <p>DECIMALS $\pm .005$</p> <p>ANGLES $\pm 1^\circ$</p>		<p>ACV00230-2</p>	
<p>MATERIAL</p>		<p>USED ON</p>	
<p>APPLICATION</p>		<p>UNLIMITED</p>	

NOTES:

1. 3/8-24 UNF, RIGHT HAND THREAD.
2. MATERIAL: 1045, MEDIUM CARBON, COLD FINISH ROUND BAR STOCK.



PART NO ACV00232-1

REVISION			
LTR	DESCRIPTION	DATE	APPROVED
-	RELEASED FOR PRODUCTION	94-03-04	SPRAGUE
XA	CORRECT SPELLING ERRORS	94-03-08	SPRAGUE
XB	CHANGED DIAMETER TO .50	94-03-16	

UNLESS OTHERWISE NOTED DIMENSIONS ARE IN INCHES. SHARP CORNERS AND EDGES. TOLERANCES ON FRACTIONS $\pm 1/16$ DECIMALS $\pm .005$ ANGLES $\pm 1^\circ$		DATE 94-01-10		DESIGN ACTIVITY U.S. ARMY ARMAMENT, MUNITIONS AND CHEMICAL COMMAND DEFENSE AMMUNITION CENTER AND SCHOOL SAVANNAH, ILLINOIS 61074-9639	
		DIW	CHECKER PROJ ENGR SPRAGUE	ALIGNMENT PIN, 3/8-24UNF, SECONDARY STEEL CONTAINER, COUPLED	
SUBMITTED JHK THOMAS J MICHELS CHIEF, SUPPLY ENGINEERING DIV		CAGE CODE B 28620		SIZE B	
APPROVED BY ORDER OF COMMANDING GENERAL, U.S. ARMY MATERIAL COMMAND (AMC) WILLIAM F ERNST CHIEF, LOGISTICS ENGINEERING OFFICE		SCALE 2		UNIT WT	
MATERIAL ACVM0230-2		NEXT ASSY		USED ON	
APPLICATION		DISTRIBUTION STATEMENT A, UNLIMITED		SHEET 1 OF 1	

TEST METHOD I

1. COMPLETE THE APPROPRIATE TORQUE SEQUENCE FOR THE CONTAINER
2. CONNECT HELIUM SOURCE TO SWAGELOCK. IF INSTALLED, OR INSTALL SCHROEDER VALVE TO MAKE THE CONNECTION.
3. PRESSURIZE CONTAINER TO 5 ± 1 PSI WITH HELIUM.
4. USE MASS SPECTROMETER WITH QUICK TEST PROBE TO CHECK ALL WELDS, AND FLANGE JOINTS TO INCLUDE AREA AROUND BOLTS/STUDS. RECORDED LEAK RATE NOT TO EXCEED 1 X 10⁻⁶ CUBIC CENTIMETERS HELIUM PER 3 ATMOSPHERES PER SECOND (1 X 10⁻⁶ cc He/3Atm/Sec) OR THE LEAK RATE REQUIREMENTS OF THE CONTAINER.
5. CONTAINERS EXCEEDING THE LEAK RATE IN STEP 4 SHALL HAVE THE LEAK POINT(S) IDENTIFIED FOR REPAIR.
6. AFTER REPAIR, CONTAINER WILL BE RE-TESTED IN ACCORDANCE WITH STEPS 1-4 ABOVE. THE HELIUM FROM THE PREVIOUS TEST MUST HAVE DISPERSED INTO THE SURROUNDING AIR BEFORE AN ACCURATE READING CAN BE OBTAINED ON ANY NEW TEST.
7. IF A SCHROEDER VALVE WAS INSTALLED, REMOVE SCHROEDER VALVE AND INSTALL A PIPE PLUG IN ACCORDANCE WITH NOTE 1.

TEST METHOD III

1. COMPLETE THE APPROPRIATE TORQUE SEQUENCE FOR THE CONTAINER.
2. CONNECT THE VACUUM PUMP INLET HOSE INTO A PLUG OR THE TEST SAMPLE.
3. BLOCK THE TEST CONTAINER A FOOT OFF THE FLOOR WITH THE CONTAINER OVERHANGING THE BLOCKING.
4. EVACUATE THE CONTAINER TO 0 ATMOSPHERE.
5. COVER THE CONTAINER WITH PLASTIC SHEETING DRAPING ON ALL 4 SIDES AND HELD AT THE FLOOR LINE BY A ROPE OR OTHER SUITABLE MEANS TO FORM A COMPLETE INVERTED BAG. INSURE THE PLASTIC IS WITHOUT HOLES.
6. ADMIT HELIUM INTO THE BAG AT THE BOTTOM UNTIL THE BAG STARTS TO EXPAND LIKE A BALLOON (TEST SPECIMEN SURROUNDED BY A HELIUM RICH ATMOSPHERE).
7. MONITOR THE EXHAUST OF THE VACUUM PUMP WHICH HAS BEEN CONTINUOUSLY RUNNING SINCE STEP 4. THE RECORDED LEAK RATE IS NOT TO EXCEED $1 \text{ H} \times 10^{-4}$ CUBIC CENTIMETERS HELIUM PER ATMOSPHERE PER SECOND ($1 \text{ H} \times 10^{-4} \text{ cc H}_2/\text{atm}/\text{sec}$) OR THE LEAK RATE REQUIREMENTS OF THE CONTAINER. THE MONITORING TIME IS TO BE AT LEAST 5 MINUTES FROM THE END OF STEP 6.
8. CONTAINERS EXCEEDING LEAK RATE AT STEP 7 WILL BE REMOVED FROM THE INVERTED PLASTIC BAG AND LEAK POINTS IDENTIFIED FOR REPAIR BY TEST METHOD I.
9. AFTER REPAIR, THE CONTAINER WILL BE RE-TESTED IN ACCORDANCE WITH STEPS 1-7 ABOVE.
10. REMOVE THE VACUUM HOSE FROM TEST SAMPLE AND INSTALL A PIPE PLUG IN ACCORDANCE WITH NOTE 1.

TEST METHOD II

1. COMPLETE THE APPROPRIATE TORQUE SEQUENCE FOR THE CONTAINER.
2. INSTALL SCHRAEDER VALVE.
3. PRESSURIZE CONTAINER TO (2 ATM ± 0.5 PSI) WITH HELIUM.
4. VENT CONTAINER TO 1 ATMOSPHERE.
5. PLACE CONTAINER INTO A VACUUM CHAMBER.
5. REDUCE PRESSURE IN VACUUM CHAMBER TO 0 ATMOSPHERE.
7. THE RECORDED LEAK RATE IS NOT TO EXCEED 1×10^{-6} CUBIC CENTIMETERS HELIUM PER ATMOSPHERE PER SECOND (1×10^{-6} cc H₂/Atm/Sec.) OR THE LEAK RATE REQUIREMENTS OF THE CONTAINER.
8. TESTS EXCEEDING LEAK RATE AT STEP 7 WILL BE REMOVED FROM THE CONTAINER AND LEAK POINTS IDENTIFIED FOR REPAIR BY TEST METHOD 1.
8. AFTER REPAIR, THE CONTAINER WILL BE RE-TESTED IN ACCORDANCE WITH STEPS 1-7 ABOVE.
8. REMOVE SCHRAEDER VALVE AND INSTALL PIPE PLUG IN ACCORDANCE WITH NOTE 1.

NOTES:

1. TO INSTALL PIPE PLUG AFTER TESTING, SEAL THE PLUG WITH ANTISEIZE (TEFLON) TAPE, MIL-T-27730. WRAP TAPE 1-1/2 TO 2 TIMES AROUND THREADS COUNTERCLOCKWISE (IF LOOKING AT PLUG HEAD) OR CLOCKWISE (IF LOOKING AT PLUG END). INSTALL PIPE PLUG AND TORQUE TO 50-75 INCH-POUNDS.

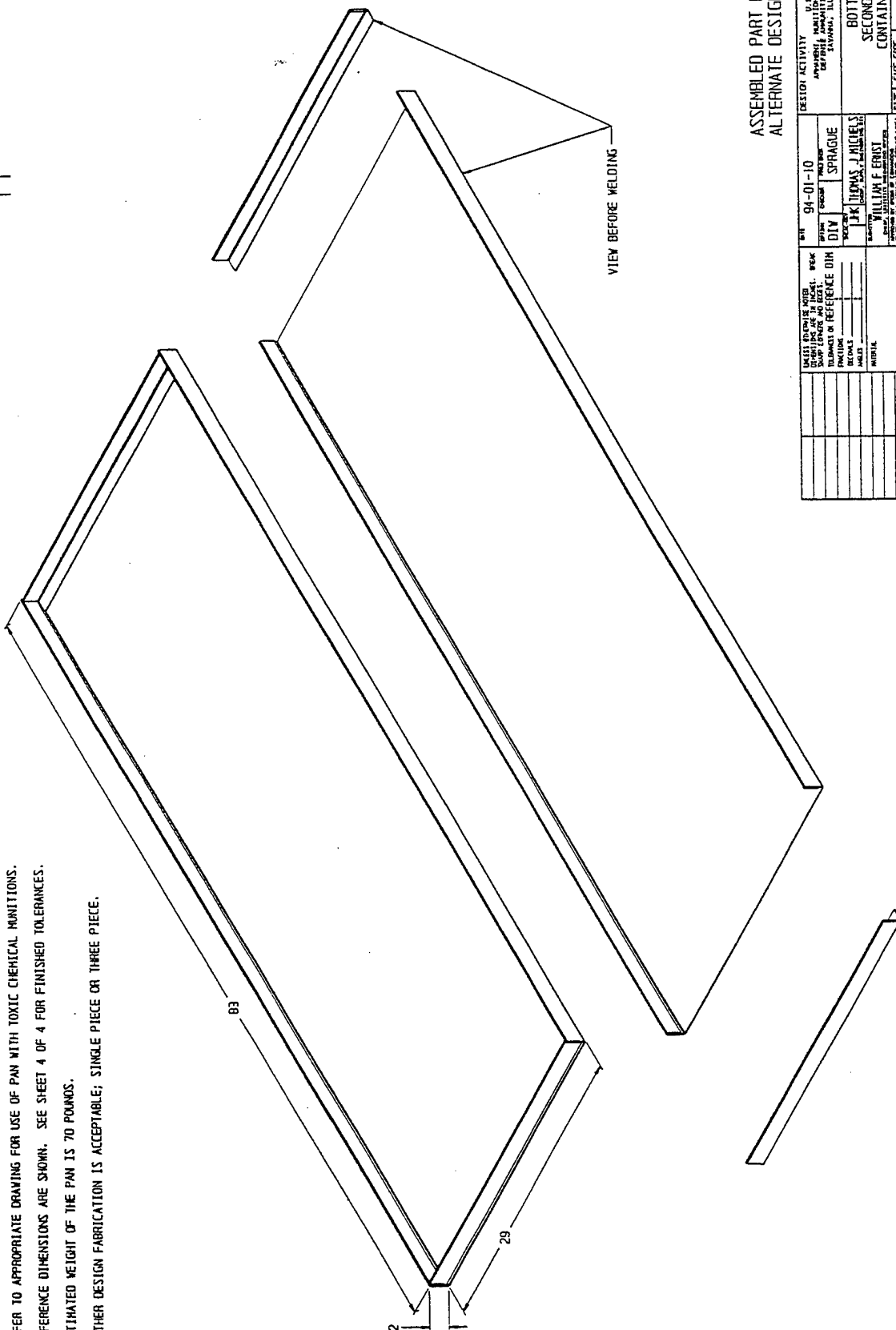
LEAK-TEST PROCEDURES; TOXIC CHEMICAL MUNITION OVERPACK CONTAINERS		DATE CODE D 28820		ACV00233	
SIZE D 28820		LEAK-TEST PROCEDURES; TOXIC CHEMICAL MUNITION OVERPACK CONTAINERS		DATE CODE D 28820	
NAME WILLIAM F ERNST		TITLE WILLIAM F ERNST		ACV00233	
ADDRESS 1000 N. W. 10th Ave., Suite 100 Fort Lauderdale, FL 33304		PHONE (305) 555-1234		FAX (305) 555-1234	
CITY FORT LAUDERDALE		STATE FL		ZIP 33304	
COUNTRY USA		ORGANIZATION WILLIAM F ERNST		PROJECT LEAK-TEST PROCEDURES; TOXIC CHEMICAL MUNITION OVERPACK CONTAINERS	
DATE 94-01-10		TIME 10:00		LOCATION SPRAGUE	
TESTER WILLIAM F ERNST		REVIEWER WILLIAM F ERNST		APPROVER WILLIAM F ERNST	
DATE 94-01-10		TIME 10:00		LOCATION SPRAGUE	
TESTER WILLIAM F ERNST		REVIEWER WILLIAM F ERNST		APPROVER WILLIAM F ERNST	
DATE 94-01-10		TIME 10:00		LOCATION SPRAGUE	
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DATE 94-01-10		TIME 10:00		LOCATION SPRAGUE	
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DATE 94-01-10		TIME 10:00		LOCATION SPRAGUE	
TESTER WILLIAM F ERNST		REVIEWER WILLIAM F ERNST		APPROVER WILLIAM F ERNST	
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TESTER WILLIAM F ERNST		REVIEWER WILLIAM F ERNST		APPROVER WILLIAM F ERNST	
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DISTRIBUTION STATEMENT A, UNLIMITED

REV	DESCRIPTION	DATE	APPROVED
1	RELEASED FOR PRODUCTION	94-03-04	SPRAGUE

NOTES:

1. REFER TO APPROPRIATE DRAWING FOR USE OF PAN WITH TOXIC CHEMICAL MUNITIONS.
2. REFERENCE DIMENSIONS ARE SHOWN. SEE SHEET 4 OF 4 FOR FINISHED TOLERANCES.
3. ESTIMATED WEIGHT OF THE PAN IS 70 POUNDS.
4. EITHER DESIGN FABRICATION IS ACCEPTABLE; SINGLE PIECE OR THREE PIECE.

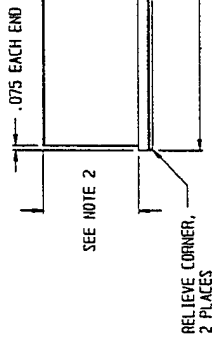


ASSEMBLED PART NO ACV00235-1
ALTERNATE DESIGN; 3 PIECE

UNLESS OTHERWISE NOTED, DIMENSIONS ARE IN INCHES. TOLERANCES ARE AS SHOWN. DIMENSIONS OF REFERENCE DIM.	DATE	94-01-10	DESIGN ACTIVITY	U.S. ARMY ARMED FORCES DEVELOPMENT CENTER FORT MONMOUTH, NEW JERSEY 07041-5030
PART NAME	DIV	SPRAGUE	PART NO.	ACV00235-1
DRAWN BY	WILLIAM F. ERNST	CHECKED BY	WILLIAM F. ERNST	APPROVED BY
MATERIAL	STEEL	FINISH	NONE	TREATMENT
APPLICATION	ACV00235-1	SCALE	1/4"	SHEET 3 OF 4
DISTRIBUTION STATEMENT A, UNLIMITED	ACV00235-1	SCALE	1/4"	SHEET 3 OF 4

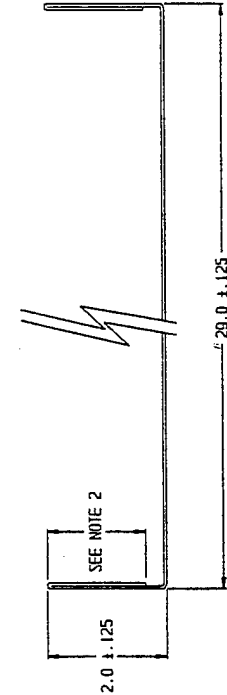
NOTES:

1. MATERIAL: 14 GA (.0747), 36 INCH WIDTH, ASTM-A366, LOW CARBON, COMMERCIAL QUALITY, COLD ROLLED SHEET STEEL.
2. SPARK THE FOUR TOP EDGES AS SHOWN. THE SPARKED DIMENSION IS THE RESULTANT MATERIAL LEFT AFTER FORMING PART NO ACV00235-2 FROM 36 INCH WIDTH SHEET (EVENLY DIVIDED). USE THE SAME SPARKED DIMENSION FOR PART NO ACV00235-3.
3. THE ENDS ARE TO BE FULL WELDED AT ALL JUNCTIONS ON THE INSIDE FOR NO LEAKS (WATER TEST).
4. TACK WELD ENDS AT OUTSIDE.

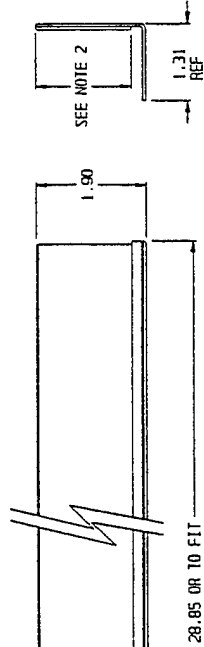


PART NO ACV00235-3,
1 REQD. SEE NOTE 1;
ESTIMATED FLAT = 4.75 X 28.85,
2.9 POUNDS

SEE NOTE 3
1/16



PART NO ACV00235-2,
1 REQD. SEE NOTE 1;
ESTIMATED FLAT = 36 X 83,
64.2 POUNDS

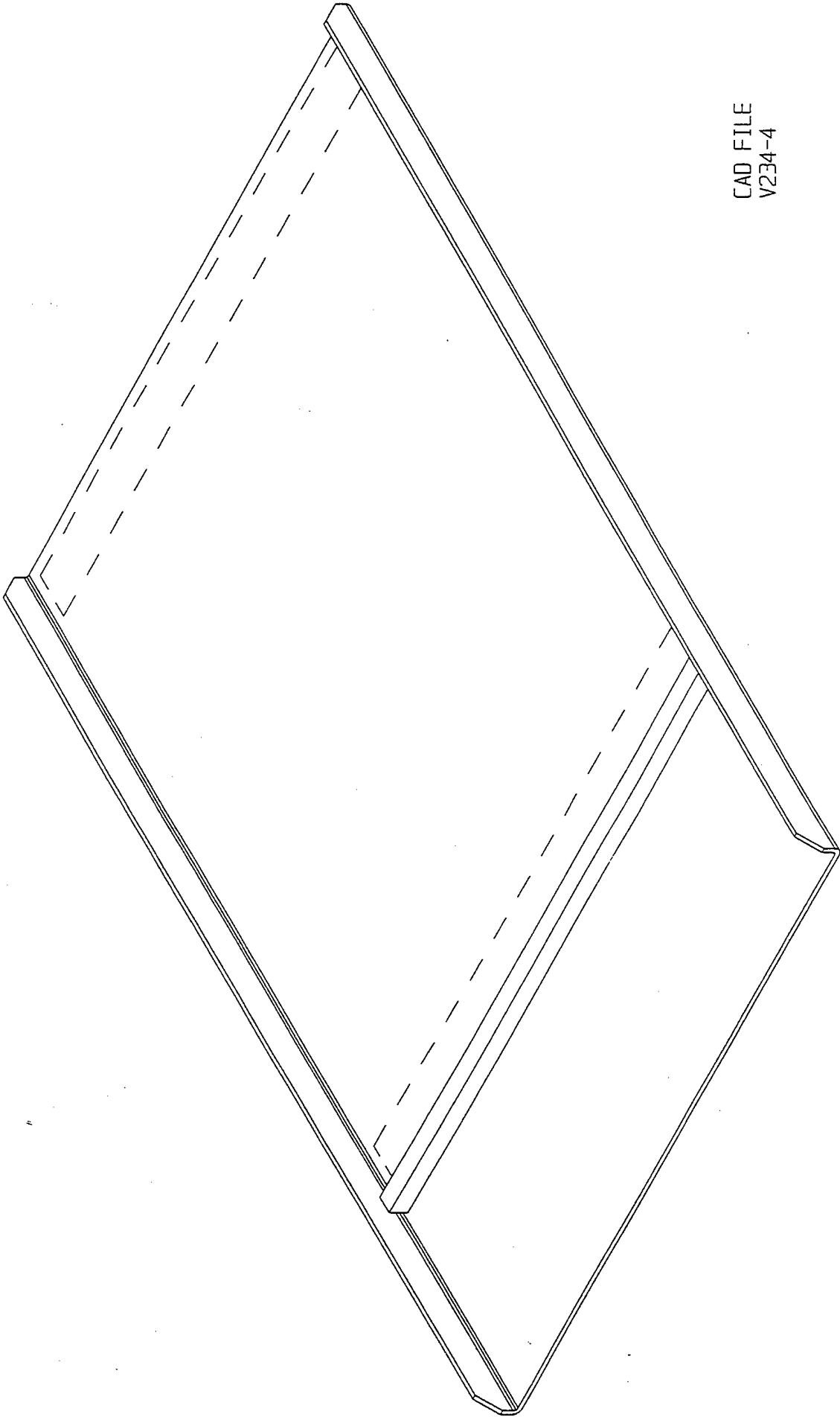


1/16, 2 PLACES

1/16, 1-4
SEE NOTE 4

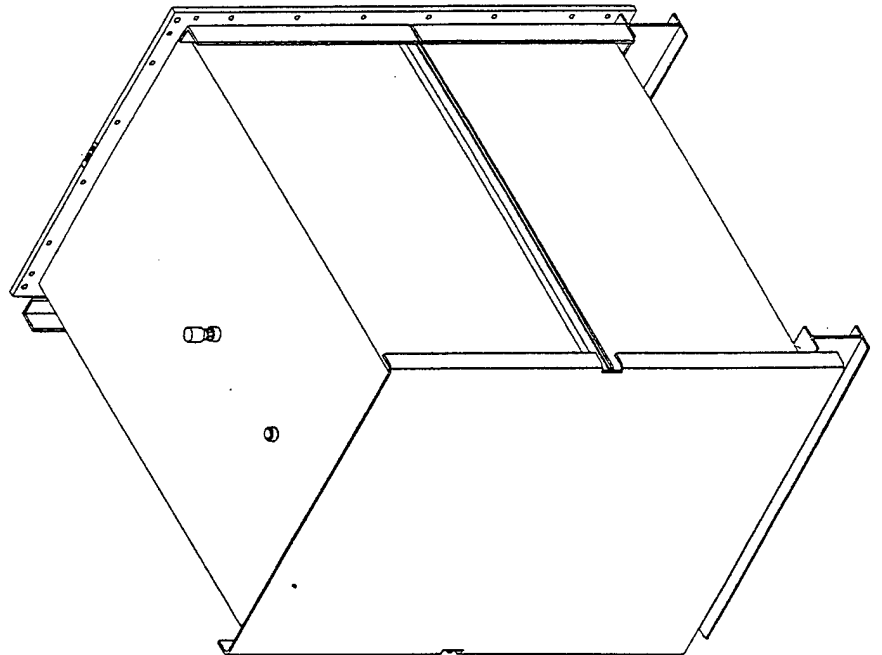
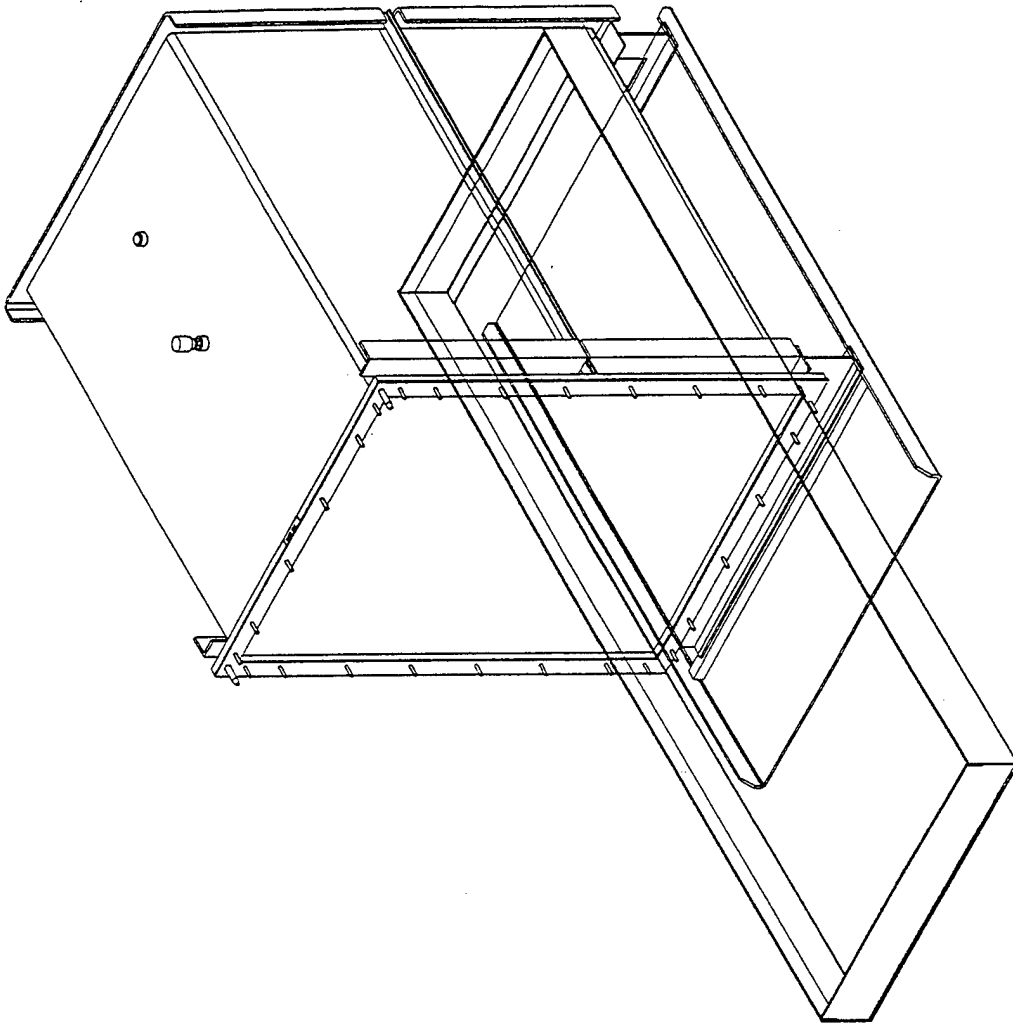
ASSEMBLED PART NO ACV00235-1
ALTERNATE DESIGN; 3 PIECE

DESIGN ACTIVITY		APPROVAL		DATE		APPROVED	
DATE	BY	DATE	BY	DATE	BY	DATE	BY
94-01-10	SPRAGUE	94-03-04	SPRAGUE	94-03-04	SPRAGUE	94-03-04	SPRAGUE
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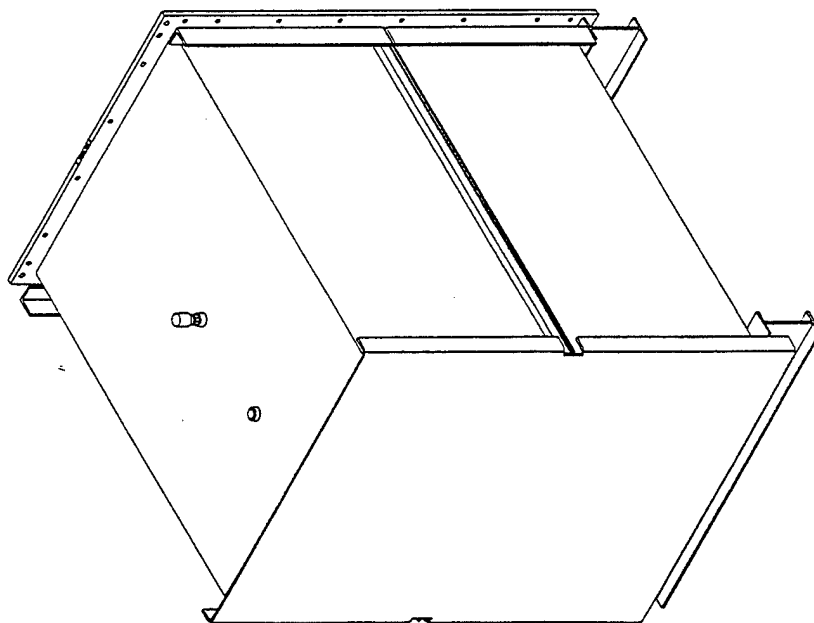
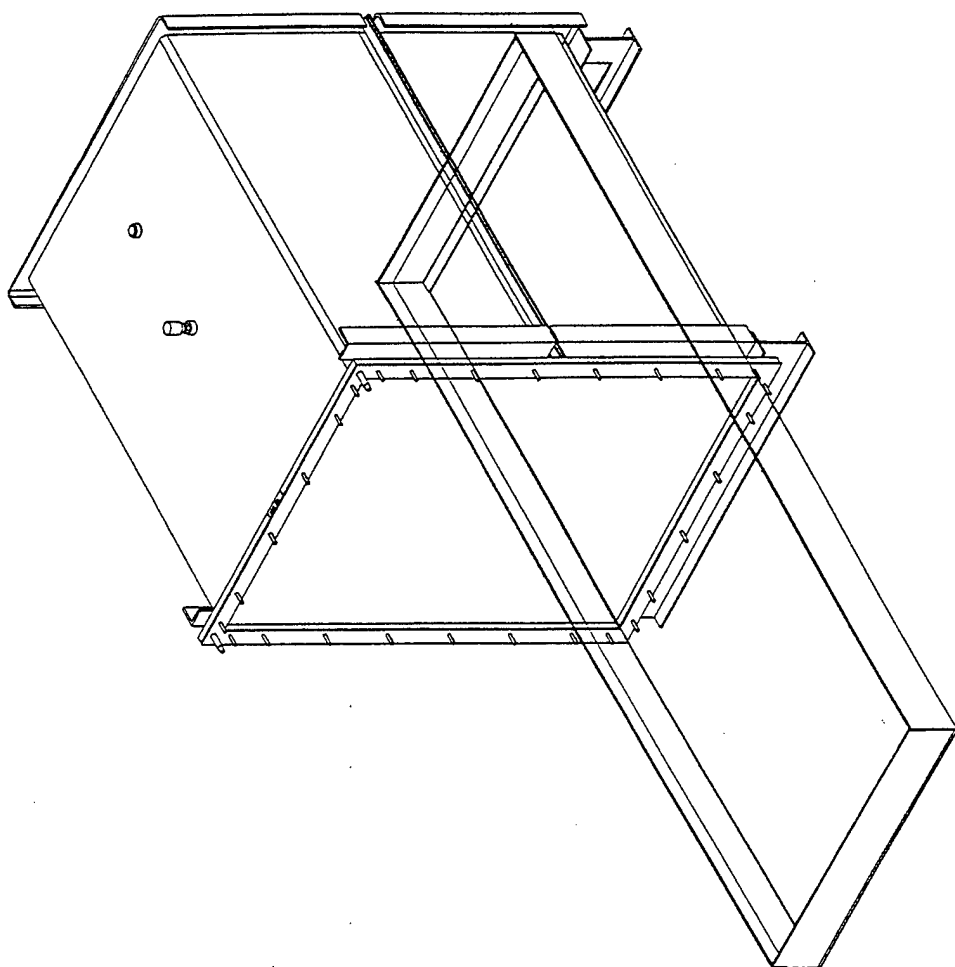


CAD FILE
V234-4

CAD FILE
SSC-NAIL-2.PRT



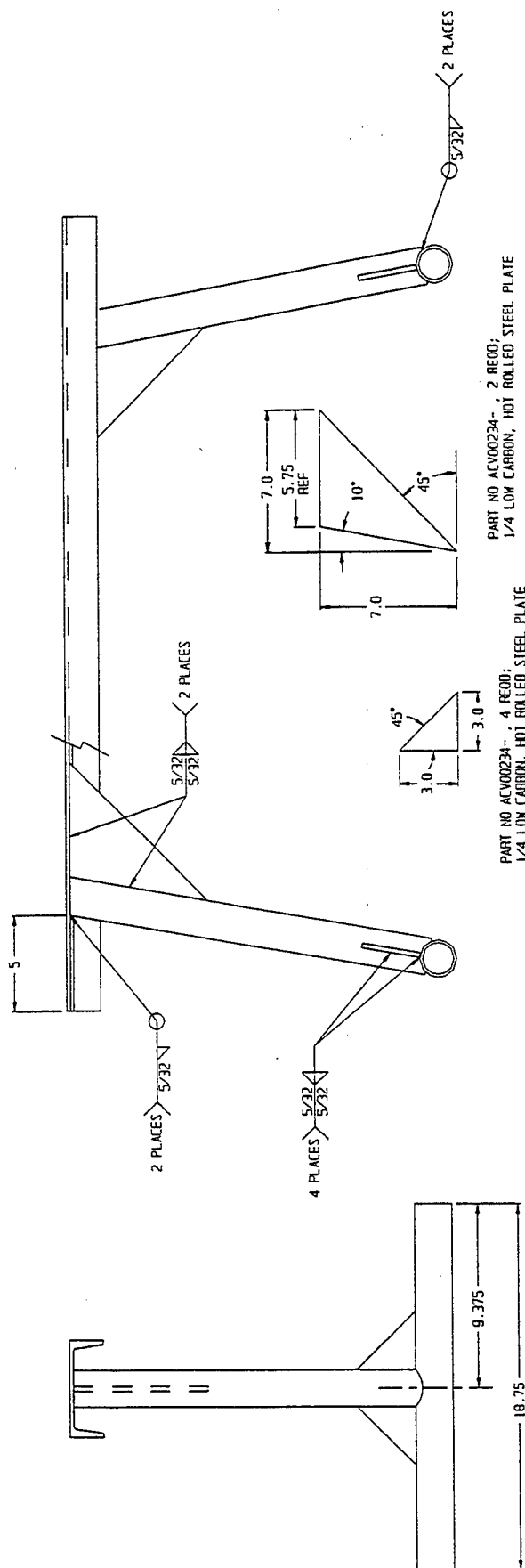
CAD FILE
SSCRAIL.PRT



1. A SAFETY STAND (2 STEEL SAW HORSES) IS USED TO SUPPORT THE COUPLED SSC CONTAINERS AFTER THE INITIAL SNUGGING OF THE NUTS AT TOP AND TWO SIDES OF THE FLANGE. THE STAND ALLOWS FOR A SAFE TORQUE SEQUENCE OF ALL NUTS. THE COUPLED CONTAINERS ARE PLACED ON THE SAFETY STAND BY A FORK LIFT TRUCK.

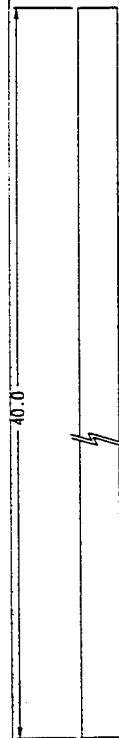
PART NO. ACV00234-
SAFETY STAND USAGEDISTRIBUTION STATEMENT A, UNLIMITED

REVISION		DATE	APPROVED
DESCRIPTION	YY-HH-00	YY-HH-00	
PRODUCT BASELINE	YY-HH-00		
ERR 010111	YY-HH-00		



PART NO ACV00234 - 2 REOD:
1/4 LOW CARBON, HOT ROLLED STEEL PLATE

PART NO ACV00234 - 4 REOD:
1/4 LOW CARBON, HOT ROLLED STEEL PLATE

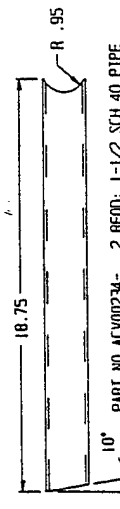


CAD FILE
V234-3

PART NO ACV00234 - 2 REOD; 1-1/2 SCH 40 PIPE

PART NO ACV00234 - 1 REOD:
4 INCH - 5.4 LBS/FT STRUCTURAL STEEL CHANNEL

ASSEMBLY PART NO. ACV00234 -
TWO ASSEMBLIES REQUIRED FOR
SAFETY STAND

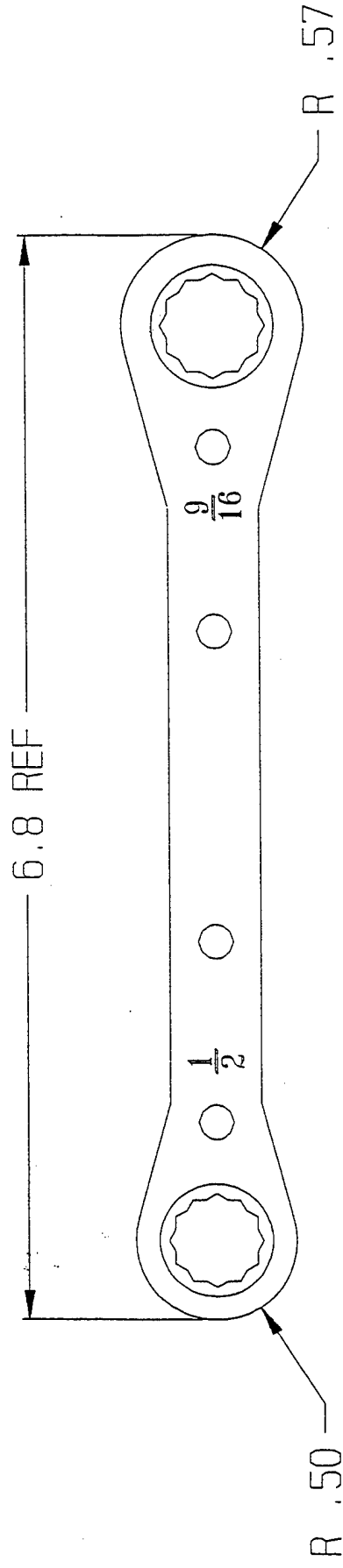


PART NO ACV00234 - 2 REOD; 1-1/2 SCH 40 PIPE

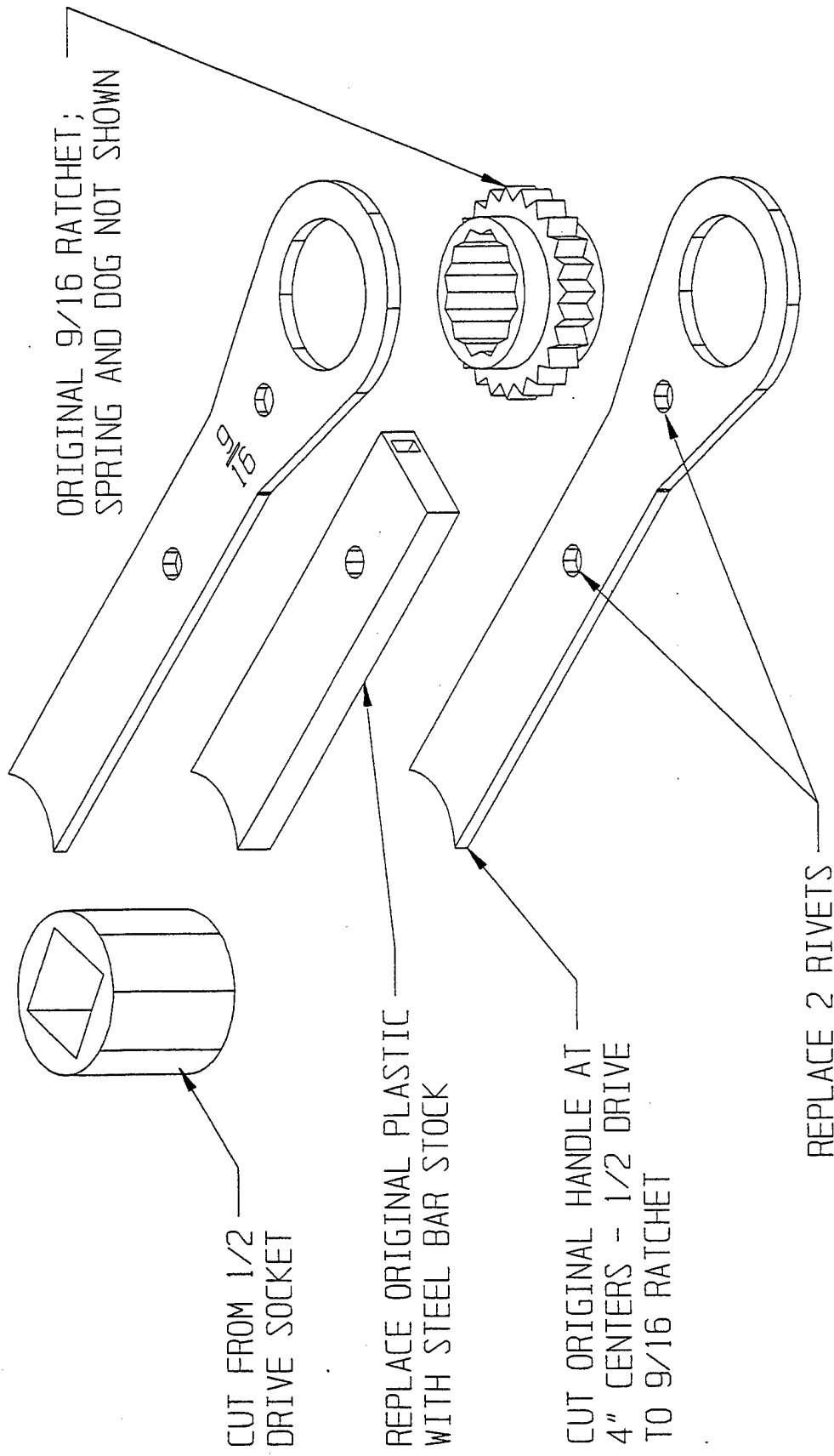
UNCLASSIFIED MATERIAL EXCEPT WHERE SHOWN OTHERWISE		94-02-08		GEOID ACTIVITY		U.S. ARMY ENGINEERING CENTER FORT BELVOIR, VIRGINIA ILLUSTRATION NO. 94-02-08	
REMARKS ON DRAWING		DIVISION		METHOD		SUPPORT EQUIPMENT, SECONDARY STEEL CONTAINER, COUPLED	
REVISION		DATE		BY		TITLE	
1		11/01		SPRAGUE		D	
2		11/02		SPRAGUE		20820	
3		11/03		SPRAGUE		3/8	
4		11/04		SPRAGUE		VI	
5		11/05		SPRAGUE		UNIT VI	
6		11/06		SPRAGUE		SHEET 1 OF 1	
7		11/07		SPRAGUE		ACV00234	
8		11/08		SPRAGUE		SCALE 3/8	
9		11/09		SPRAGUE		UNIT VI	
10		11/10		SPRAGUE		SHEET 1 OF 1	

DISTRIBUTION STATEMENT A, UNLIMITED

1/2 X 9/16 STANDARD RATCHET BOX WRENCH
McMASTER-CARR PART NO 5461A33

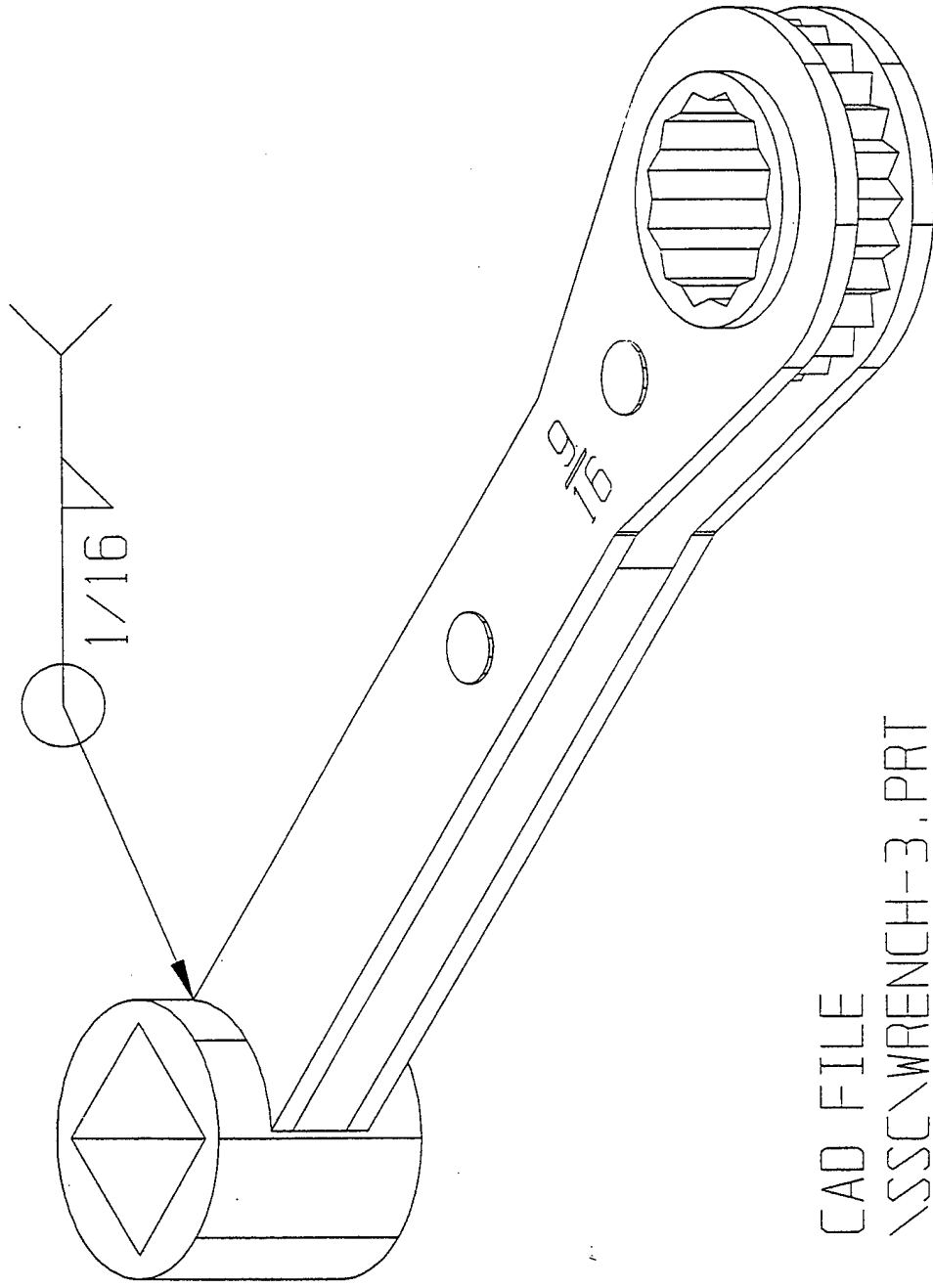


CAD FILE
\\SSC\\WRENCH-1.PRT



CAD FILE
\\SSC\\WRENCH-2.PRT

9/16 RATCHET BOX CROW-FOOT WRENCH, 1/2 DRIVE



CAD FILE
\\SSC\\WRENCH-3.PRT